

Hope (M. B.)

DISCOURSE

DESIGNED TO SHOW THAT

PHYSIOLOGICAL INQUIRIES ARE NOT UNFRIENDLY TO RELIGIOUS SENTIMENT.

DELIVERED IN THE TENTH PRESBYTERIAN CHURCH, PHILADEL-
PHIA, JANUARY 18, 1845.

BY

M. B. HOPE, M. D.

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To the Rev. Dr. M. B. Hope.

REVEREND AND DEAR SIR.—The undersigned, a Committee of the Medical Class, of Jefferson College, appointed for the purpose, at a meeting held on the 19th inst. beg leave to present the thanks of the class for the able, eloquent, and instructive discourse showing that physiological inquiries are not unfriendly to religious sentiment, delivered by you on the 18th inst.

They are also authorised and instructed to beg a copy of the discourse, that by its publication its usefulness may be more extensively diffused.

Yours, very respectfully,

J. K. MITCHELL, M. D.
W. M. TOWLER, Va.
JAMES B. ELLIS, Miss.
G. F. COOPER, Ga.
H. L. WITMAN, Ct.
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EDUCATION ROOMS, No. 29 Sansom St. Jan. 30, 1845.

GENTLEMEN.—I beg leave to transmit, herewith, a copy of the discourse, designed to show that physiological inquiries are not unfriendly to the religious sentiment, but the reverse; which you were so kind as to request for publication. I regret that, in consequence of absence, immediately after its delivery, I was not able, sooner, to meet your wishes.

Be pleased, gentlemen, to convey to the class my sincere acknowledgment for the unexpected honor they have done me; and accept for yourselves my best thanks, for the gratifying terms of your note.

With great respect,

Yours, truly,

M. B. HOPE.

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A Discourse on Physiology Applied to Religion.

Oppositions of science falsely so called.—1 Timothy 6 : 20.

THE sentiment has been most industriously propagated in certain quarters, that the advance of science tends to undermine the faith of religion. And men rejecting the fundamental doctrines of religion, call themselves *Philosophers, par excellence*.

It is flattering to the pride of our reason to conceive that science lifts us to an eminence, from whence we can look down upon the popular religious creed, as the sages of Greece and Rome did upon the gross mythology of the common people : and there is plausibility enough in the sentiment, to make it extremely dangerous, especially to those who dislike the restraints which religion imposes upon the depraved passions of the human heart.

On every account, this sentiment demands a calm inquiry, and especially if, as we believe and are sure, it is all a mistake ; and true science, instead of the mortal foe, can be shown to be the *twin sister* of true religion. Any passing discrepancy between them is only apparent, and proceeds from one or the other being misunderstood. Either it is not pure religion, but the bigoted views of some narrow religionist on the one hand, or else on the other, it is not true science, but the partial and presumptuous “oppositions of science falsely so called.”

The friends of religion have themselves to blame in part, for this supposed hostility between revealed religion, and the researches of science. They have often attempted to crush by authority the spirit of philosophical inquiry ; and disprove by ecclesiastical adjudication, the inductions of science. When Galileo demonstrated the true doctrines of the solar system, viz : that the sun was stationary while the earth revolved, first on its own axis and then around the sun,—the church of Rome instead of grappling with his arguments and demonstrations, and trying them by the test of truth, pronounced them heretical ; and waged against them a war of ecclesiastical censures, which could issue only in her own inglorious defeat.

The same course has been pursued repeatedly since. When the infant science of geology began to unfold the wondrous history of the earth, and those who undertook to decypher the mysterious characters in which that history was written upon its crumbling fossil monuments, began to make out dates older than the received chronology of the Bible, the science was denounced as essentially infidel in its tendency, and even pious and learned divines, who attempted to ascertain what its records did really teach, and to harmonize them with the Scriptures, were pelted with reproaches as enemies in disguise. Such conduct is both useless and unwise.

The more perfectly the works of nature are explored, the more profoundly the sciences which depend upon them are cultivated, the more clear and satisfactory will be their harmony with divine Revelation. It is impossible that the works of God should be at war with his word. If philosophical theories are believed to be wrong, let it be shown by investigation and argument. To attempt to put them down by denunciation, will always be held by the world, as proof of a narrow mind, or a bad cause. The truth—the whole truth, and nothing but the truth, should be our motto, whether science or religion be the object of inquiry.

It is due to the enlightened friends of religion to disclaim, in their name, all fellowship with a kind of warfare, which has done much to bring discredit upon the cause of religion.

But the fault is not all, nor even mainly, with the friends of religion. Much of the hostility between these twin sisters, is due to "the oppositions of science falsely so called." The keen impetuosity of the human mind, stimulated by the ardent desire of discovery, has ever tempted philosophers to generalize too hastily, and to presume too strongly upon the truth of conclusions thus drawn. And in addition to this, we are sorry to say, that some distinguished men have shown a strong prejudice, and sometimes a malignant opposition, to the evidences of religion, widely different from that calm and sincere love of truth, which should ever actuate the true philosopher. We might cite in illustration of these statements, the case of the famous Hindoo astronomical tables, which were hailed with exultation by certain philosophers, as furnishing conclusive proof that the Hindoo Astronomers had observed the starry heavens, long before they were created, according to the Chronology of Moses; until De Lambre and La Place demonstrated that they were borrowed from the Arabians after the Christian era. Afterwards, and on the same principle, the Zodiacs of Dendera and Esneh were pressed into the service, to prove that the temples which contained them were older than the world, till Champollion discovered the key to their hieroglyphic inscriptions, which revealed the fact, that they were founded by Roman Emperors, after the time of Christ. And as for the flourish of trumpets with which scepticism hailed the announcement of the first speculations of geology, we believe the most timid among us, have long since given their last fears to the wind. Such facts should make the disciples of infidelity less hasty and confident, and allay the jealousy of the friends of revelation.

To examine in detail the objections alleged on scientific grounds against religion, would require volumes, instead of a brief discourse; but we hope by seizing upon the leading fundamental principle, from which those details branch out, to strike through the root of the difficulties: and if successful in this, we shall be content to leave the branches to wither and perish of their own accord.

The grand question is, whether science, in its profound and

successful researches, has explained the whole phenomena of the universe by the agency of physical causes; in such a sense as to dispense with the existence of a God.

To give it more closeness and point, we propose to illustrate the argument by reference to the science of physiology. The specific inquiry, then, is, whether this fascinating study has mastered, and accounted for, all the phenomena of life, by reference to the laws of material organization, under the action of the vital principle, so as to set aside the doctrine of all spiritual agency whatever. We maintain that it has not—nay more, that it has no such tendency.

And our first remark is, that the opposite belief rests upon an entire misapprehension of the argument. If to find the *physical* causes of phenomena, were to remove the evidences of an intelligent spiritual Being, then indeed there might be ground for alarm at the progress of science; and this is precisely the mistake, into which philosophical sceptics have fallen. Thus La Place has remarked, that in the progress of the human mind, final causes have been driven away to the farthest limits of knowledge, and physical causes have been found sufficient to explain phenomena, which were once referred to the direct power of God. But this is not the ground at all on which the evidences of natural theology rest: it is *the proofs of design* in the ordering of these physical causes, from which we infer the existence of an intelligent creator. And these evidences of design are just as clear and conclusive proof, after you have discovered the proximate physical causes of the phenomena, as they were before.

To illustrate clearly the true force and falacy of La Place's remark, let us suppose an accomplished Philosopher and a rude Savage, to be introduced for the first time into the midst of extensive machinery, by which raw silk or cotton is converted into some exquisitely finished fabric. The savage in his rude wonderment, would instantly conclude, that the moving frames and flying spindles and puffing engines, were all instinct with life, and gaze with awe upon their mysterious movements, as the direct product of some intelligent spirit. The philosopher sets himself to study the amazing mechanism, on the principles of science, and threads his way through the labyrinth of complex and exquisite machinery, till he detects the moving cause of the whole, in the steam generated in the boiler of the engine. Now while it is true that he has generalized the agency which propels the machinery, and removed it from each spindle and frame, where the ignorant savage supposed it to reside, and traced it to a palpable physical cause; yet every one must see that this philosophical process, triumphant as it is, has no tendency whatever to obliterate the proofs of design, which are stamped upon every wheel and pulley and piston of the machinery. So far from being impaired by this mastery of the mechanical agency employed in producing the wondrous result, his estimate of the intelligence and skill

which it displays, is *immeasurably greater*, than it would have been, if the same result had been achieved, without the aid of such mechanism at all.

Now this is precisely what science has done with the phenomena of nature. It has discovered their physical causes, and the mechanical laws by which they operate: but it has not the slightest tendency in the world to invalidate our belief, that an intelligent agent conceived, originated and governs the whole. The truth is, on the contrary, that the very progress of our knowledge of these proximate causes, and their wonderful adaptations, discloses constantly more brilliant proofs of intelligence, wisdom and power. The very same phenomena from which, by one induction, we reach the true mechanical agency employed, display those evidences of design, from which, by another induction, equally philosophical with the former, we infer the intelligent personality of the great first cause. When Newton declares, as he does in the General Scholium which closes his *Principia*, that the magnificent arrangement of the solar system could never have originated, except by the design and administration of a Being endowed with intelligence and power; and that the universe to the remotest star, is clearly under the government of a single such Being, whom he does not hesitate to proclaim and vindicate, as "*Dominus Deus*"—the Lord God of creation,—who will venture to aver, that his conclusion is unphilosophical, or in conflict with his own great discovery—the law of gravity? And yet, there are men claiming to be *the Philosophers* of religion, who scorn the doctrine as puerile superstition, who yet have not learning enough to read intelligently, a single proposition, of that immortal work, which contains the masterly and sublime demonstration.

So much for the general principles involved in our argument, and which apply to all science alike. Their bearing upon the results of physiological inquiries, will be obvious at a glance. As in every other instance, the only legitimate effect of holding the torch of science to the amazing mechanism of the world of life, must be, not to unsettle our belief in the intelligence, wisdom, goodness and power of the Creator, by disclosing the organization and forces of the living economy, but to pour a flood of light upon the proofs of design, and reveal upon every part by its brilliant effulgence, the stamp and signature of a God.

This part of the argument has been handled and illustrated with such transcendent ability by Paley and Chalmers, and the authors of the *Bridgewater Treatises*, that we leave it with this brief statement, and pass on to inquire whether an adequate cause for the phenomena of life can be found in the living structure itself: whether these evidences of design may not be adequately accounted for by the laws of vitality, without the necessity of inferring the existence of a separate, personal, spiritual intelligence. For it must be here, if any where, that our argument breaks down: here, if any where, lurks the atheistic tendency of our fascinating science.

The physiology of man presents to us several distinct classes of phenomena. To adopt substantially the classification of one of our own distinguished physiologists, we have, 1st, the phenomena of the intellectual and moral faculties: 2, the mechanical phenomena, resulting from the action of the apparatus of motion for the organs and fluids of the body: 3, the phenomena of the nervous influence: 4, the vital chemistry of the organic functions, digestion, respiration, nutrition, secretion, &c.: and lastly, the phenomena of the principle of life—whatever it may be—which awakens the peculiar vital energy, and controls the action of the chemical forces, so as to produce the specific forms of the animal organism, instead of formless chemical compounds.

Our limits compel us to pass over all the others, replete as they are with illustrations of the point before us, and interrogate only the last of these classes for its evidence respecting the question of a God, viz. : the primary phenomena of the vital force. Abstruse as this inquiry is, it is full of interest; because the chain of physical causes has been traced up to the action of this principle of life. Beyond this point physical science cannot pass. Here, then, if any where within her domain, must we find an adequate first cause for all the phenomena of life.

With the aid of the microscope in the hand of genius, the history of the operations of the vital force has been made out by observation. There is, first of all, the existence of simple germinal vesicles, or globules, apparently endowed with complete animal life. A reaction then takes place between these organic vesicles, or living cells, and the surrounding albumen, according to the laws of vital chemistry now in play, and they grow, and multiply or reproduce, precisely like the infusoria, or animalculæ of the lowest forms. Thus, for example, the globules of the blood are reproduced precisely after the manner of what is called *fissiparous generation*. And thus, under some mysterious discriminating law of the vital force, all the materials or tissues out of which the several organs are to be formed, are produced. This is the uniform process of nutrition and organic growth. The nutritive material is converted into these cells, before it passes into organic forms. And out of these animalised cells, the vital actions construct first, the tissues, and then, out of these tissues, all the organs of the system, and finish them in the complete and symmetrical form which we behold in the perfect structure.

Such is a very brief account of the vital movements, in the development of the animal frame. While it will hardly be intelligible to others, it will serve to recall to your minds, the history of facts with which you are already familiar, in the full illustrations of your physiological studies. Of the physical cause which guides these forces, and shapes their wonderful phenomena, science professes to give us no explanation. She merely groups them together, and ascribes them to a mysterious agency, called the vital force—the principle of life. Now we might here legiti-

mately press the inquiry, as to the nature and origin of this principle. Is it a physical, or is it a spiritual agency? Is it original or is it derived and dependent?

But we waive this point for the present, and return to the effects,—the phenomena of the vital force, to see what we can gather from thence. We observe, then, that by some unaccountable law, the vital actions produce, out of the same substances, entirely different products or tissues; and out of these they build the various organs and structures of the body. Now, when we come to study these organs, under the guidance of comparative anatomy, we find an immense and countless variety of forms, developed by the same vital forces, and yet each form is perfectly adapted to its circumstances. And farther, in the continuance of every species of living beings, the same forms are reproduced, with absolute exactness, so long as the race continues. Every organ in each answers its purpose perfectly; there is nothing superfluous, and nothing deficient.

The inquiry will hardly be raised whether these phenomena may not be the puttings forth of a blind force, being what they are by *mere chance*; for there is not a single attribute of chance in the case. They are produced, not at random, but after a *fixed law*, (which excludes the very idea of chance,) and, farther, that law is the expression of a perfect conception of the relations of these organs to the end intended.

In other words, no conclusion within the range of science is more clear, than that the animal economy is developed, by the vital forces, not by chance—not even empirically—but *after a perfect and preconceived plan*.*

Now the precise inquiry on which this whole argument hinges, is this:—Where does this intellectual conception, which is embodied in the construction of the animal frame by the vital forces reside?

There are but two answers which can be given. The first, which as a theory, is clear and satisfactory, ascribes it to the infinite mind of an intelligent Creator, who uses as his instrument what we blindly call the vital force—the principle of life—the laws of which are but the expression of his intelligence. The second hypothesis, which is the only alternative to this conclusion, is that of the transcendental physiologists, which supposes the conception of the future organism to reside in what they term the

* The argument here stated is so analogous to that urged with remarkable force, and beauty of illustration, by Dr. Jackson, in his last Introductory Lecture, in the University of Pennsylvania, that the author deems it due to say, that he had not seen or heard of that lecture, till a friend, who heard the present discourse, informed him of the coincidence, and subsequently furnished him with a copy. He is happy to be supported by such authority; and the striking coincidence of thought, proceeding from independent sources, is a very strong guarantee of the truth of the view presented in the text.

unconscious intelligence of the vital forces themselves. This hypothesis, we may say in passing, is only a modification of that of the ancient Grecian stoics. This, we repeat, in some of its shapes, is the only hypothesis which professes to set aside the evidence of an intelligent and personal God, by alleging that the vital forces are, themselves, an adequate first cause. Let us briefly try the truth of this hypothesis, by a simple analysis of its requirements.

If, then, the principle of animal life—or the vital force—be the true original cause of the animal organism ; if instead of being the mere agent of an intelligent Creator, it constructs the human frame in virtue of *its own* intelligence, (for this is the hypothesis,) then the induction of all the known phenomena, will lead us to infer, that it is endowed, among innumerable others, with such properties as the following :—

In the first place, it must possess a complete knowledge of the properties and capabilities of the organisable and organic matter, out of which it forms the living tissues. It must comprehend the mysterious processes of that vital chemistry which, by changing the chemical equivalents of decomposed matter, transforms it into bone, muscle, nerves, vessels, and other organs, according to the wants of the human economy. In the second place, it must understand perfectly the mechanical laws, both of solids and fluids. No arrangement has ever been found in the animal kingdom, with its millions of forms, evincing a mechanical blunder. Thirdly, the adaptation of the external senses, indicates a perfect knowledge of the properties and laws of foreign bodies. And lastly, (not to multiply specifications which are endless,) this hypothesis involves the supposition, that the vital force must fully comprehend the nature of the reasoning process, in order to construct a material organ for effecting that process. For it would be just as absurd to suppose that it could contrive and create the brain, (if that be the organ of the mind,) without a perfect conception of the nature of thought and emotion, as it would be to suppose that a man could invent a complicated and exquisite instrument of music, without understanding the science of music, or even the properties of sound.

And, farther, even if we could imagine that the blind forces of animal life had some mysterious perception of the nature and wants of their own individual organism, yet it is well known that every living being has organic relations to other beings, for which provision must be made ; and that much of the structure, both of the animal and vegetable world, would be perfectly useless, but for this relation to other beings. Now it is obvious that this relative organism requires that the intelligence of its constructor should embrace the plan and wants of every other being to which it is related, as well as its own. So that we must endow the vital force, not only with a complete conception of the individual being it is to form, and in which it resides, but with intelligence com-

mensurate with its innumerable and boundless relations to the universe at large.

Now, the simple question is, does all this vast intelligence and wisdom—immeasurably transcending the highest exercises of the human reason—reside in the blind forces of organic life? Where is the evidence of the monstrous assumption? Consciousness bears no such testimony. All our ascertained knowledge is against it. Not a single analogy can be plead in its favour. If, in the absence of all proof, and without the faintest shadow of evidence, any one chooses to embrace this hypothesis, we have nothing farther to say; but when he comes to thrust it upon us, as an *induction of science*, nothing but courtesy can prevent us from smiling in his face.

There is, in fact, just as much reason to attribute intelligence to a stone, as there is to a plant—to the forces by which a mineral in solution chrysalises in such exquisite beauty, as to the vital forces of organised beings. Indeed to invest a thing which is confessedly *unconscious and without personality*, with the attributes of the highest and purest intelligence, if it be not utter nonsense, is, to say the least, to confound all our use of language. It is to shed darkness instead of light, on the phenomena. The simple truth is, that an *unconscious intelligence* is a *contradiction in terms*. No man can conceive of intelligence without consciousness, any more than of pain or pleasure without sensibility: Let him try, and he will find it transcends the most fanciful efforts of his imagination (to say nothing of calm and careful induction based on known facts) to conceive of a being endowed with perfect intelligence, and yet destitute of consciousness, it is to suppose that it is possible to *know*, and yet *not to know* at the same moment. Consciousness is the very receptacle of all knowledge—the very basis of all intelligence.

A result indicative of intelligence may indeed be wrought out by forces that are unconscious; but then they are the *mere instruments* of an intelligent agent. The celebrated *calculating machine* of Prof. Babbage, for example, capable of performing the most astonishing operations in arithmetic, displays intelligence of the highest order; but that intelligence, it is needless to add, resides not in the machine itself, (amazing as its capabilities are,) but in the mind of its accomplished projector. So the intelligence which governs the operations of the vital force, in developing with such perfection of wisdom the living organism, resides not in that blind force, which is only the *unconscious instrument*, but in the mind of the great Creator. If, therefore, the knife of the anatomist, and the microscope of the physiologist, could reveal to us the physical organism by which every function is performed, from the lowest movement of the vital forces, to the highest exercises of the rational and moral powers, while we should join to pay the tribute of enthusiastic admiration to the triumphs of science, we

should still enquire, with undiminished interest and force, for the intelligent first cause which projected and presides over this living organism. Let the mind be held fast to the contemplation of that single point, under the condensed light of truth, and it is impossible, on philosophical grounds, to reach any other conclusion.

But before we pass from the subject, let us try this hypothesis by another class of phenomena. Without availing ourselves of the stronger evidence furnished by the intellectual and moral exercises of man, we take a single case of what has been called *instinct*: a property which, contrary to the hypothesis, exists in the greatest perfection where the volume of brain is very small, and its organisation imperfect; as, for example, in the insect tribe. The question is, will organisation, endowed with animal life, explain the phenomena of instinct.

Take, for instance, the comb of a bee, built out of materials which it gathers from the flowers of the field, and mixes into a paste, which no art can imitate. We pass by a thousand evidences of inimitable skill, of surpassing interest, and select a single fact for the purpose of our illustration, viz.: that the little cells are all six-sided, and precisely uniform. Now, it may not be known to all our hearers, that it is demonstrable on clear mathematical principles, that this is the precise figure which combines these three qualities in the highest possible degree, viz.: 1st, the greatest possible economy of space, 2d, the greatest possible economy of material, and, 3d, the greatest possible degree of strength. In other words, the figure is *mathematically perfect*. Now this is certainly in the highest degree remarkable,—that a little insect should construct a set of receptacles for its food, not only with inimitable beauty and skill, but on the purest mechanical principles. Nay, that it has always done so, since the world began, while it was only a few years ago, that science enabled the philosophers to demonstrate the mechanical principles involved in the construction of the comb of a bee.

Now, there are but three possible explanations of this remarkable fact. Either, first, the insect must be endowed with the requisite wisdom of itself, to devise and construct these cells; in which case it must be skilled in the highest walks of mathematics, and the honor of inventing the calculus belongs neither to England nor France—neither to Newton nor Leibnitz—or, in the second place, this perfect structure is the product of chance, and not of skill at all; and then we have a clear case of the most brilliant design, without being designed,—or, in other words, an effect without a cause, which no man, in his senses, can believe. Or, finally, we have a clear and conclusive proof, that beyond the range of physiology, there is an intelligent Being, whose wisdom and skill has furnished that little insect with a power which we call *instinct*, which enables it to do what man, with all his boasted reason, cannot equal. Which of these conclusions is most conso-

nant with sound philosophy, we leave to each one to decide for himself.

Let, then, the physiologist carry his researches to the utmost limits of science: let him, (to shift our illustration from the animal to the vegetable world,) let him show us the first movement of vitality in the germ of that tiny seed, and the chemical laws by which it is governed—how its sprouting organs seek each their element of earth or air, and absorb the appropriate material of their growth—let him analyse the very sunbeam that awakens and stimulates those vital actions, and display the curious fact, that it is the yellow ray of light which presides over the digestive process, while the blue ray is the excitor of its motive forces; and so far from feeling jealous of the tendency of his inquiries, we will hail with delight the triumphs of his genius and skill. But it surely is competent to inquire, whence sprang that mysterious vital force which moulds those perfect organic forms, and which cannot be inherent, of itself, in that little mass of starch and gum, which compose the vegetable germ. Who impressed upon it those wonderful and perfect laws, by which it seeks its food,—decomposes and converts it into sap, secretes the solid organs which form the leaf, the flower, the fruit,—parts the very beams of light into their primitive colors, seizes upon certain rays, and sends the others forth upon errands of utility or taste. And it is surely a legitimate conclusion on the strictest principles of inductive science, that these amazing phenomena are the product of intelligence, wisdom, and power, which immeasurably transcend the conception of finite minds—or, in other words, are infinite. Thus it is that the awakened intellect, in its inquiry into the ultimate causes of things, finds no settled repose, till it reaches and rests upon the scriptural doctrine of an intelligent, self-existent, and infinite God.

Thus far we have argued on the supposition of the existence of a germ, endowed with vitality, and governed by laws which provide for the development of all the individual organic forms, and for the reproduction of the species. Let us now, for a moment, push our inquiry a step higher, and interrogate philosophy, for some plausible account of the *first origin* of those germs, or ova, which evolve the forms and forces of physiology, without the admission of a God.

There are but three distinct theories, which have been devised for the purpose.

The first, is that chiefly elaborated by Leucippus, Democritus, and Epicurus, among the Greeks, and adopted under various modifications since. Divided, as its advocates have been, as to many subordinate questions, they all agree in regarding the whole phenomena of the universe, including those of life and reason in their highest forms, as the result of *fortuitous combinations* of unconscious, unintelligent material atoms.

It is hardly necessary to say, that, in the first place, this theory

leaves us wholly in the dark, as to the origin of these material atoms, endowed with the capacity of producing such magnificent results: and, in the second place, so far from explaining those results, it involves them in still deeper mystery. The whole analogy of nature teaches that chance is the parent of confusion, and not of order, and, least of all, of such perfect order as the universe every where displays. "If," says one, "you throw a fount of types upon the floor, some of them might, *by chance*, spell a syllable, or possibly a word; but never a sentence, and much less, a book." The rude, unshapen rock, *might* be the product of *chance*, but the exquisite mechanism of the human frame, *never*. The very term, chance, implies essentially the absence of design; and, therefore, to explain the magnificent designs of the universe, by the doctrine of *chance*, is a clear contradiction in terms. It is unnecessary to enlarge upon the absurdity of supposing such phenomena as thought, emotion, or moral sentiment, to be the result of any known or conceivable properties of matter.

The second atheistic hypothesis, is that which teaches the existence of matter, and the succession of living things, according to the laws of nature, just as they are at the present time, from all eternity. This was the oldest and most popular creed of the Hindoo, and some Grecian, schools of philosophy. We might justly remark, that this theory professes to explain nothing. It only buries the evidences of design, which we every where behold, in the dark and unsearchable depths of a past eternity. But farther, the progress of knowledge has shown that the theory itself is untrue. The geological records of the globe, if we may credit that science, carry us back to a period in its history, when the present races of living beings had no existence. It is as well ascertained as any conclusion of modern science, that the world and its present living races have not existed from eternity, by the reproductive laws of nature; but were created since the beginning of time. And there is probable philosophical evidence, that they will be finally destroyed; or, at least, their physical condition completely changed. There is no time to state more fully the grounds of this conclusion; nor is it necessary, as we believe the opposing hypothesis is wholly abandoned.

Driven by the light of advancing knowledge from these strong holds of ancient philosophy, scepticism has taken refuge and made a last stand, in the modern hypothesis, which attributes the existing condition of the universe to an inherent law of *gradual developement*. Thus La Place conjectured, (and the conjecture has become the popular hypothesis of astronomers,) that the matter of the universe existed originally in a diffused and nebulous state, and by gradual condensation became the solid bodies of the solar system. Now supposing the existing laws of matter to account for this condensation, and the consequent spherical shape of these bodies, yet the origin of this nebulous matter endowed with such properties is the great mystery: and besides there is no pro-

perty of matter, and no law of mechanics, as Newton has shown, which will account for the origin of these bodies, and especially of the comets, in their present orbits. We need a Creator, therefore, just as much as ever, (even if this theory were true, which is yet to be demonstrated,) to originate the matter of the universe, and to lead forth the celestial bodies in their beautiful and perfect courses.

The physiological sequel to this hypothesis, is, that this inherent law of developement at length evolved from matter, organic life, in a low and feeble form, from which by gradual approximations it finally reached the perfection of the human species. One noble philosopher imagines he has clearly traced our pedigree as far back as the monkey tribe: and another with bolder analysis, fancies he has detected our proud original in the oyster genus.

Were it not that some names of high repute, are found among the advocates of this hypothesis of gradual developement, we should not expend upon it here, a single sentence of sober argument. As it is, we shall only stop to say, that it does not in the least affect the argument for an intelligent first cause. And farther, that the hypothesis, so far as it relates to physiology, is contradicted by all our knowledge on the subject. It is a settled law of the animal kingdom, that there is no such thing as a transmutation of one species into another. Not only has it never been known to occur, but it is known to be impossible, without a *fundamental change* in the law of reproduction. If there be any one fact established in natural history, it is that the law of reproduction has no element of gradual developement, but provides for the most rigorous sameness, in all that is peculiar to its type, and that no new species has ever been originated, by any known natural law whatever. You may indeed produce a mongrel by the commixture of two contiguous species of the same genus, but even that cannot perpetuate its species. This whole hypothesis is overthrown by the established facts of true science.

Thus it is, that the mature inductions of sound philosophy, correct the crude hypothesis of science falsely so called, and coincide with the true doctrines of Revelation. And we have not the shadow of a doubt, that it will be so to the end; and the last crowning induction of a perfect universal science, will be just what Newton has stated in the closing Scholium of his immortal Principia, that the great first cause of all the phenomena of the universe, must be, and can be no other than, an intelligent, self-existent and infinite God.

If there were time, (which there is not,) this argument could easily be produced, and applied with the same conclusiveness, to the doctrine of a *divine Providence*. It is our deliberate belief, that the late beautiful discoveries of physiology, reveal to us an absolute demonstration, of the intelligence and power of God actually present, in moulding the forms and controlling the functions of every living organism. And it is scarcely extravagant

to say, that there is no scene, and no spot, on earth, except those of the Cross of the Redeemer, which have filled us with more delight, adoration and awe, than when we have beheld the hand of Providence fashioning, as it were beneath our eye, the wonderful Structures of Life.

To some of our hearers this discussion may seem entirely too speculative, and withal very unprofitable. But they may rest assured, there are many minds of great importance from their destined influence in society, as well as their individual value as immortal beings, who are laboring under great difficulties at this very point. We well remember with what horror we once stood ourselves, upon this very precipice, and felt what we had deemed the rock of imperishable truth, crumbling beneath our feet; and saw nothing before us, but the black and bottomless gulph, of philosophical scepticism.

The argument is far from being merely speculative. There is nothing which more effectually blunts the keen edge of religious convictions, than the vague suspicion, that this great fundamental doctrine may be only a dogma of superstition, and that the progress of science threatens to blot it from the creed of philosophy. On the other hand, the intelligent and cordial admission of a God, such as the scriptures reveal, cannot be inoperative upon either the heart or the life. It flashes a conviction upon the slumbering conscience which first wakes it into sensibility, and then discloses by its broad and glaring light, the guilt of the soul. That moral sense which exists in every human bosom, cannot be at rest, under the felt conviction that there is a God. And by the way, the existence of this moral sense, indicates as clearly the being of a holy God, as the structure of the eye indicates the existence and properties of light. If there were no such Being, and consequently no righteous retribution, then have we a sense within us, which is not only useless, but has misled nearly the whole human race, upon the most vital of all questions: and has tormented us with anxiety and dread, which are utterly groundless. If this be so, it stands an isolated case in the whole history of creation.

This conscience towards God, is not the mere echo of the religious counsel of an honored father, nor the response of the social nature to the tender infant lessons and fervent prayers of a godly mother: it is not the superstitious power of fond religious solicitude and hope—the fervent “God bless you,” which trembled from the lips of pious parental affection, as you launched from the safe and sacred home of youth, upon the temptations and trials of the world: no, it is the still small voice of a witness implanted by the Creator for himself, in the moral nature of us all—even those who have not enjoyed that best of blessings—a religious education. And so decisive is its testimony that we cannot silence it if we would. False philosophy may embarrass it, and dissipation or business may drown its voice; but it will speak out again in moments of silent sober thought, and at the honest hour of death.

I speak thus, my respected friends, to your own experience, for I know the human heart, "Disguise it as he will, there is not a rational man, who feels himself on terms of solid confidence, with the Being who made and sustains him. There is not one who can look God fully and fearlessly in the face. Let the feeling be as deep and inexplicable as it may, still is terror at God, the real and the powerful and the constant feeling of nature; and there is doubtless a foundation for it. There is the consciousness of guilt: and there is the uncontrollable sentiment of a power, which can carry all its purposes into execution. There is the haunting idea of a great and righteous Monarch, who can summon all creation into his presence, and sweep all iniquity and whatsoever offendeth, away from him."

I repeat, I have no doubt at all, that this is the experience at times of ever human being. I have no time, now, to state the way of relief, through the death of the great Redeemer, as the sacrifice for our guilt. But I can not close this discourse more appropriately, than to plant myself upon the firm conclusion which science, and Revelation, and conscience, combine to establish, that there is an infinitely wise, holy and powerful Being, who made and sustains us, and who controls our destiny, with an absolute will; and to press, with the utmost emphasis upon each of my respected hearers, aged and young, learned and ignorant, the pungent exhortation of the Scriptures: "PREPARE TO MEET THY GOD."